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The Presentation of a Method for Measuring Dissonance as an Emotion Leading to Attitudinal Change

Deanna Routh
University of Central Florida

THE PRESENTATION OF A METHOD FOR MEASURING DISSONANCE AS AN EMOTION LEADING TO ATTITUDE CHANGE

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DEANNA ROUTH
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INTRODUCTION

The Dissonance Theory was first put forth by Leon Festinger (1957). In his original work, Festinger theorized that "if two cognitive elements are relevant, the relation between them is either dissonant or consonant. The magnitude of the dissonance increases as the importance or value of the elements increases." According to Festinger's supposition, a person will experience dissonance if he perceives a contradiction or incongruity to exist between relevant, cognitive elements. Festinger explains further that this resulting dissonance "acts in the same way as a state of drive or need or tension" (Festinger, 1957, pp. 16, 18).

Using Festinger's description of dissonance as a state of drive or tension, Cronkhite (1966) posed two hypotheses relating to dissonance:

1) When an individual perceives two or more cognitions to be "dissonant," he experiences a state of drive or arousal; and

2) The individual experiencing the state of drive or arousal will behave in such a way designed to reduce the drive.

In his studies, Cronkhite defined the degree of dissonance as the magnitude of the difference between a subject's attitude toward the concept and his attitude toward the source. Therefore, the greater the difference between attitude toward source and attitude toward the concept, the greater the intensity of dissonance. Cronkhite believed the state of arousal relating to dissonance was a physical phenomena.

Arousal, as defined by Berlyne (1960), is "a unitary emotional response dimension ranging from sleep to frantic excitement."

Using both Festinger and Cronkhite's definitions, it would appear that dissonance is an emotional state involving cognitive elements. Chapanis and Chapanis (1964) furthered the idea that dissonance is an emotion with their definition:

> The basic premise is that discrepant cognitions create tension which the individual strives to reduce by making his cognitions more consistent. This tension is called cognitive dissonance...

Tension is also defined as an emotional state by Mehrabian and Russell (1977).

Two years after Cronkhite presented his operational definition of dissonance, Aronson (1968) hypothesized that dissonance is a "significant motivational force only when the self-concept or some other firmly held expectancy was involved." In his definition, Aronson uses two terms, which lead the reader to believe dissonance is an emotion: "motivational force" and "expectancy."

Malkis (1982) defined dissonance as a state of tension or disequilibrium caused by a logical or connotative inconsistency among cognitions. Because tension is considered an emotional response (Mehrabian and Russell, 1977), Malkis' further portrays dissonance as an emotion.

Despite these and numerous other attempts to explain dissonance, few authors have provided operational definitions allowing for the actual measurement of dissonance. Biggers and Christ (1983) recognized this problem and formulated an operational definition using three

dimensions of emotional response: pleasure-displeasure, arousal-sleep, and dominance-submissiveness. Conceiving of dissonance as an emotional state resulting from inconsistent psychological elements, they define dissonance as "an emotional state composed of low pleasure, high arousal, and at least moderately high dominance."

This concept opens new avenues by which proven tools for gauging emotions can be applied to the neglected problem of measuring dissonance. The purpose of this paper is to examine the emotional component of dissonance and to present a viable instrument for its measurement.

Background Research

From the first dissonance research to the present investigators have failed to measure dissonance itself. Festinger and Carlsmith (1959) conducted an experiment in which subjects completed a boring task and then were asked to tell other subjects (actually confederates6 that the task had been interesting. Some subjects were paid $1.00 to participate in counter-attitudinal advocacy (CAA) while others received $20. Festinger and Carlsmith found subjects who were paid $1 believed the task was significantly more enjoyable than those in both the control group and the $20 condition.

The authors explained that subjects receiving only $1 for their CAA did not feel the payment was enough justification for the action; so in order to regain consonance, they changed attitudes to fit the role play of praise for the task. Thus, Festinger's theory becomes a theory of "insufficient justification."

Dissonance studies have varied justification in many ways. Miller (1973) found that most studies manipulated material reward. At the writing of his article, at least 24 studies had used cash or something with cash value; 10 studies utilized audience approval or disapproval; justification was linked to the attractiveness of the sponsor in six studies; and four or more studies varied the numbers of reasons for participating in CAA.

Justification is difficult to manipulate. Berger (1969) paid subjects $2.50 or $.50, and asked them to rate the adequacy of this reward on a four-point scale. The high justification subjects ranked $2.50 as maximally adequate with a 4.0 on a four-point scale, and yet those who received $.50 did not rate their reward below a 3.0. These findings illustrate the difficulty faced when attempting to achieve a perception of low justification. Bachman, Bukowski, Forkner and Peretz (1969) believed subjects who received $.50, yet knew others were receiving $2.50, would be disgruntled. Results did not support this assumption. In fact, they found $.50 was conceived to be adequate.

Some studies have not manipulated the reward form of justification in order to produce dissonance (Goethals, Cooper & Naficy, 1979; Higgins, Rhodewalt & Zanna, 1979); though, these studies did try to ensure that subjects were aware of the freedom to choose participation. Cooper and Worchel (1970) manipulated justification and consequence, concluding that both are necessary elements of dissonance. Goethals, Cooper and Naficy (1979) manipulated three levels of consequence while Higgins et al. (1979) varied arousal and pleasure as types of consequences. Both studies achieved results attributed to dissonance

without manipulating reward. Other authors have not given a reward for participation in CAA (i.e., money or extra credit), and yet achieved dissonance effects (Bazerman, Guiliano & Appelman, 1984; Beauvois & Joule, 1982; Goethals et al., 1979; Higgins et al., 1979; Rholes, Baily & McMillan, 1982; Steele & Liu, 1981). These studies lead the reader to believe consequence as well as reward and freedom to choose can be considered a form of justification since it produces dissonance effects singly.

Public commitment enhances the perception of negative consequences resulting in dissonance. Carlsmith, Collins and Helmreich (1966) demonstrated that subjects who role played to a confederate had greater attitude change with less justification than students who wrote CAA essays receiving the greater reward. They concluded that for dissonance results, CAA must be public.

However, studies have effectively used essays instead of public commitment to achieve dissonance. The key is that a person must foresee negative consequences resulting from their behavior whether public or by essay. Linder, Cooper and Jones (1967) found dissonance effects by manipulating incentive and choice after asking subjects to write an essay advocating a ban on Communist speakers at state-supported institutions. Other researchers have used CAA essays as a means of producing dissonance when the subject perceives possible negative consequences from their actions. (Higgins, Rhodewalt & Zanna, 1979; Zanna, Higgins & Taves, 1976).

As mentioned briefly before, a form of justification required for dissonance is perception of choice. In Festinger and Carlsmith

(1959), subjects were given the option of refusing to role play. Linder et al. (1967) manipulated choice as a variable affecting dissonance. They discovered an inverse relationship between magnitude of incentive and attitude change for subjects who were given the choice of participating in role play and a positive relationship for those who were not given any alternatives. This result was credited to dissonance. Most subsequent studies have assumed that choice is an inherent part of dissonance production.

As discussed earlier, despite advances made in the study of conditions necessary to produce dissonance, few authors have defined dissonance operationally. This lack of definition has made it difficult for dissonance advocates to support its existence. Festinger (1957, p. 15) recognized this problem when he formulated the theory originally:

> The conceptual definitions of dissonance and consonance present some serious difficulties. If the theory of dissonance is to have relevance for empirical data, one must be able to identify dissonances and consonances unequivocally. But it is clearly hopeless to attempt to obtain a complete listing of cognitive elements, and even were such a listing available, in some cases it would be difficult or impossible to say, a priori, which of the three relationships holds.

Several researchers have sought to dispel this problem. Cronkhite (1966) perceived dissonance as a state of drive or arousal, a physiological state. He measured the physiological state of his subjects (i.e., heartbeat) before, during, and after they listened to a speech contrary to their beliefs. He did not find support for dissonance using physical measurement of arousal. Subjects in the high dissonance condition demonstrated less physical arousal than those in the low

dissonance cell. (The arousal of dissonance should be questioned in this study since there were no apparent negative consequences perceived by the subjects.) Surprisingly, participants who did experience a high degree of arousal did not seek available means of dissonance reduction.

Linder et al. (1967) used response latency to measure dissonance. These authors offered subjects $.50 and $2.50 to participate in essay writing. After a few trial runs, the experimenter began to notice subjects in the high-choice/low-incentive condition took longer to decide whether to participate than those in the high-choice/high-incentive category. He began to time the decision process with a hidden stop watch and, interestingly enough, discovered that subjects in the high-choice/low-incentive group used considerably more time in the decision-making process than those in the high-choice/high-incentive condition. The authors concluded that pre-decisional conflict leads to post-decisional dissonance. They also examined the essays of the four groups for differences in length, persuasiveness, argument, and organization of essays. No significance resulted from this effort to measure dissonance.

Carlsmith et al. (1966) did include a measurement of dissonance in their study. Confederates were asked to rate apparent conflict and signs of discomfort in subjects. Subjects in the low-incentive condition demonstrated the greatest conflict.

Although the aforementioned studies did provide a measure of dissonance, they demonstrate little progress toward a standardized measure of dissonance. Without such a measure, the hypothesized

relationships between dissonance and attitude change cannot be validated. Miller (1973) claimed this oversight is one of the significant problems prohibiting progress of dissonance research. Despite Miller's analysis, experimenters continue to conduct research explaining results with dissonance theory. Their persistence is difficult to understand since the mechanism through which dissonance is created and reduced has not been specified (Biggers & Christ, 1983).

Few researchers in recent years have sought to measure the state of dissonance or even investigate elements of the state (i.e., pleasure and dominance). Higgins, Rhodewalt and Zanna (1979) noted three ways of reducing dissonance: attitude change, addition of a cognition, and misattribution. Therefore, a possible conclusion is that dissonance may be present even though no attitude change results from CAA. Storms and Nisbett (1970) found that when subjects were given a pill (actually a placebo) and told that it would cause side affects of arousal, they had less attitude change; instead reducing dissonance with misattribution. The authors concluded that arousal is part of dissonance and, if subjects can blame arousal experienced on the drug, they will not report as great a change in attitude.

Zanna and Cooper (1974) carried this research further by demonstrating that subjects who were given a relaxing pill experienced more attitude change. This was attributed to the possibility that subjects could not blame their unpleasant state on the pill. Other researchers have emphasized that arousal is a necessary component of dissonance (Kiesler & Pallack, 1976; Pittman, 1975).

Zanna and Cooper (1976) discovered that subjects who ingested a pill but were provided no information on side effects had no significant attitude change. It must be noted that attitude change is not the only indication of dissonance. Zanna et al. (1976), by giving their subjects a pill, may have also given them something to blame their discomfort on (misattribution), even though the individuals were not told what side effects to expect.

Higgins et al. (1979) decided to examine pleasure as a component of dissonance rather than arousal. They hypothesized that unpleasantness, and not arousal, is the motivating factor for dissonance reduction (assuming dissonance exists).

They believed that inconsistencies produce an unpleasant arousal, and purposed to study whether arousal is part of dissonance or a consequence of unpleasantness. By manipulating choice and information about the pills given (pleasant and unpleasant, arousing and non-arousing side effects), Higgins et al. (1979) concluded that future research should consider unpleasantness a component of dissonance; and, though high arousal may be present in the beginning stages, it is not a factor in reducing dissonance.

Though these people (Storm & Nisbett, 1970; Zanna & Cooper, 1974; Pittman, 1975; Kiesler & Pallak, 1976; Zanna et al., 1976; Higgins et al., 1979) are responsible for advances made in the study of dissonance components, they failed to measure dissonance itself. The results of this research, however, are important cornerstones for the operational definition of dissonance and subsequent tool for measurement discussed

later. If dissonance can be shown to exist, the many otherwise excellent studies on the subject will gain credibility in the scientific community.

Cognitive dissonance has practically become a household word. The dissonant state and its value as a persuasive property, continue to fascinate researchers up to the present. In recent years, dissonance studies have examined management behavior relating to justification of commitment to a course of action. In one study of individual responsibility Bazerman (1984) found in a simulated situation subjects would escalate financial support of a failing business venture if told they had been responsible for the initial investment decision and subsequent support given to that business. Groups and individuals not responsible for the initial investment in the now failing business did not increase financial backing. These results were attributed to dissonance. However, dissonance was neither defined or measured.

Frey from Germany and Beauvois and Joule from France have also conducted dissonance studies (Frey, 1982; Beauvois & Joule, 1982). Their research demonstrates the far-reaching effects of dissonance theory and the international interest it has received. These researchers provided information about the avoidance of dissonant information, and the effect of performance evaluation on subsequent attitudes toward a boring task. Both studies explained findings with the dissonance theory, yet did not operationally define this emotional state.

These examples are given to illustrate the tautology present in the over 900 articles and studies relating to dissonance. A noticeable

void exists where there should be operational definition and a means for measuring this thought-provoking physiological and psychological state.

Dissonance and Emotion

The many definitions discussed at the beginning of this paper describe dissonance as an emotional state. Dissonance researchers have also investigated components of dissonance, such as arousal and pleasure, indicating again that dissonance is an emotion (Cronkhite, 1966; Higgins et al., 1979; Zanna & Cooper, 1976).

Biggers and Christ (1983) have suggested that since dissonance is an emotion, it can be measured with an emotion scale. They noted that a growing body of literature exists suggesting emotional states are interrelated and can be measured with a three-factor system: pleasure-displeasure, degree of arousal, and dominance-submissiveness (Mehrabian & Russell, 1974; Mehrabian, 1980). There is indication that a common core of emotional responses exists and stimulation of one emotion influences perception in another mode (Mehrabian & Russell, 1974). Biggers and Christ cite many studies which demonstrate the interrelationship between pleasure and arousal; and, some dissonance researchers have examined the relationship in detail (Zanna & Cooper, 1976; Zanna et al., 1976; Higgins et al., 1979). Higgins et al. (1979) summarized that unpleasantness is a component of dissonance with arousal being present in the beginning stages of the emotion.

Russell (1980) asked subjects to group emotional terms such as frustrated, sleepy, and glad into related categories. He found that

these categories fit the three dimensions of pleasure, arousal, and dominance with little overlap. Russell and Mehrabian (1977) and Russell (1979) demonstrated that subjects can accurately report their own emotional state using the three factor solution. These authors claim the dimension of pleasure-displeasure is a feeling "that can be assessed readily with semantic differential measures or with behavioral indicators such as smiles, laughter, and, in general, positive versus negative facial expressions." Arousal can also be measured with the semantic differential scale as "a unitary emotional response dimension ranging from sleep to frantic excitement" (Berlyne, 1960). Some non-verbal measures of arousal are vocal activity, facial activity, speech rate and speech volume. Lastly, "dominance-submissiveness is a feeling state that can be assessed from verbal reports using the semantic differential method" and behavior such as relaxation (Mehrabian, 1970, 1972). Dominance-submissiveness operates as permission to behave. Biggers and Christ (1983) describe this emotional component as a range "from extreme feelings of being influenced and controlled to feelings of mastery and control." A more detailed explanation of dominance follows:

> When a person feels dominant (s)he feels as if (s)he has freedom to enact a full range of behavior. When pleasure and arousal are high we expect strong approach behavior, if one also feels dominant (s)he would approach more than (s)he felt submissive. (Biggers and Christ, 1983)

A list of bipolar adjectives was developed by Mehrabian and Russell (1974) with which subjects can record their emotional responses along the three dimensions of pleasure, arousal and dominance. This

instrument produced a reliability score above alpha .80 (Mehrabian & Russell, 1974).

Taking their research further, Russell and Mehrabian (1977) listed 151 emotional states and defined them in reference to the three emotional dimensions. For example, enjoyment is comprised of pleasure, arousal and dominance. On this 18-bipolar adjective scale, guilt and tension rate low in pleasure and dominance and high in arousal. They concluded that these dimensions are necessary for the defining of emotional states, but they questioned if these factors are adequate for all emotional states.

There are over 2,000 terms in English denoting various emotional states (Wallace & Carson, 1973). Some researchers place these in independent categories claiming that all emotions are mutually exclusive, while others focus on the interrelationships of emotional clusters. McNair, Lou and Droppleman (1971) presented a list of six uni-polar emotional states: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and friendliness. Russell and Steiger (1982) found that the three dimensions given earlier (pleasure-displeasure, arousal-sleepiness, and dominance-submissiveness) actually encompass the various emotional states more comprehensively.

Russell and Steiger utilized the three dimensions in two ways: measuring the emotional state of others and measuring one's own emotional state (Russell & Steiger, 1982). They found the emotional scale developed by Russell and Mehrabian (1974) satisfactory as a

reliable instrument useful for reporting on the emotional state of others as well describing the emotional state of self.

Russell and Mehrabian's (1978) results indicate that emotions influence the behavioral responses of individuals. According to this research, pleasure and arousal determine approach avoidance. Dissonance has also been studied in relation to approach avoidance (Steele & Liu, 1981; Frey, 1982).

Biggers and Pryor (1982) examined these two dimensions with respect to attitude change. When the environment elicited pleasurable responses, the speech was more effective in producing a change in attitude toward agreement with the speech. However, an environment which promoted low pleasure actually produced an opinion change in the opposite direction of that advocated by the speaker.

Biggers and Christ (1983) argued that a person's emotional response is comprised of a common core of emotion or the three affect dimensions: pleasure, arousal and dominance (Mehrabian & Russell, 1974; Russell & Mehrabian, 1977; Russell, 1980). If this is the case, changes in emotion should be measurable along the three dimensions. This paper seeks to apply the three affect dimensions to the measurement of dissonance.

Various researchers interpret these three factors as being affective rather than cognitive. Biggers and Christ (1983) claim that "the emotions elicited by a group of stimuli can be described as an affective or feeling state that is the primary response of the organism to the situation." However, Lazarus (1982) writes that the emotion experience includes three components: thoughts, action impulses and

semantic disturbances. He believed that the cognitive process is a necessary part of emotion and refused to confirm that feelings come first in the emotional process. His definition of emotion was a transaction between organism and environment in which cognitive processes are crucial."

Dissonance and Cognitions

Some authors consider cognitions the influential elements of emotions. Janis and Terwilliger (1962) asked subjects to read a fear appeal message and then give all their thoughts and feelings about what they had just read. They were allowed to comment at any time during the reading, but were asked to remark upon what they had read at the end of each paragraph. Janis and Terwlinger recorded the readings on tape and then transcribed and categorized the comments made. The categories are as follows:

Affective Reactions:

1. Expressions of worry, disturbance, emotional tension (i.e., "That is awful!").
2. Reference to unpleasant aspects of cancer.

Evaluative Comments:

1. Major criticism - complete rejection
2. Minor criticism - argument not clear
3. Major favorable - I agree.
4. Minor favorable - comments on style
5. Paraphrasing of arguments just read

The authors achieved .85 intercoder reliability on the independent ratings of comments.

Brock (1967) developed a method for thought-listing when he studied measurement of responses and not the end products of persuasion

such as attitude change, rejection and reduced credibility. Brock gave subjects 10 minutes to write everything they thought about during the message presentation. He developed a method for rating these ideas and thoughts and discovered the degree to which a person is persuaded is determined by that individual's thoughts. He suggested research continue seeking additional tools for measuring thoughts.

Cook (1969) also used the thought-listing process to examine counter arguments produced by subjects during a persuasive message. He achieved intercoder reliability of .95 and .94 for the agreement measure. Other researchers have consistently used thought-listing as an effective tool for examining cognitions inhibiting persuasion attempts (Insko, Turnbull & Yandell, 1974; Osterhouse & Brock, 1970; Pallak, Mueller, Dollar & Pallak, 1972).

Petty, Wells and Brock (1976) used thought-listing in a study to see if distraction affected yielding to propaganda. They gave subjects 2 1/2 minutes to recall and list thoughts they had during the persuasive message. Judges categorizing the thoughts had .92 intercoder reliability. Petty et al. (1976) discovered that cognitive responses mediate interaction between persuasion and distraction.

After being told the topic of the persuasive message, Petty and Cacioppo (1977) left subjects for five minutes. Upon their return subjects were given 2 1/2 minutes to list the thoughts they had while waiting and were then asked to rate their own thoughts as agreeing or disagreeing with the message. Judges agreed with subjects' ratings 100 percent. Petty and Cacioppo (1979) utilized thought-listing

again to examine effects of issue involvement on persuasion. Once more they achieved significant intercoder reliability.

The literature review has illustrated tremendous support for dissonance as an emotional state, and examined studies defining emotion. Mehrabian and Russell (1974) analyzed the components of emotion and presented a reliable scale for measuring emotion using the three dimensions of pleasure, arousal and dominance as factors of emotion. Using this literature Biggers and Christ (1983) formulated the operational definition repeated below:

> The state of dissonance can be conceptually defined as an emotional state composed of low pleasure, high arousal and at least moderate dominance. Pleasure is low because two associated elements are inconsistent. The more important these two elements are to the perceiver the greater the resulting arousal. If the two elements are inconsistent but fairly irrelevant to the perceiver, then we would expect displeasure but low arousal and, therefore, little pressure to change. As the elements become more inconsistent, more displeasure results. The more relevant to the perceiver, the greater arousal (s)he will feel. Dominance must be moderately high or change will not occur.... If the perceiver does not feel that they have permission to behave (in this case, change his/her attitude), no change will occur--no matter how much displeasure or arousal.

Using the excellent foundation laid by Biggers and Christ (1983), this paper seeks to measure dissonance as defined above and examine its relationship to attitude change. Sufficient evidence is given in current literature to support measurement of dissonance as an emotional state both with Mehrabian and Russell's (1974) bipolar adjectives and thought-listing. These tools were used in this paper in an attempt to identify dissonance as a continuous variable which might vary in intensity. Research indicates cognitive responses elicited by a communication are important in determining both the direction and

degree of attitude change (Petty & Cacioppo, 1979). Because the thought-listing procedure does not modify attitude results (Petty & Cacioppo, 1977), this process will also be used in this paper to assess dissonance. It seems likely that more negative thoughts would result from greater dissonance.

Goethals et al. (1979) distinguished between foreseen, foreseeable, and unforeseeable consequences. They defined foreseen consequences as "those whose possible occurrence the actors are explicitly aware of at the time of decision." They referred to foreseeable consequences as results of behavior not in the actors' awareness at the time of decision but that they feel they (or any reasonable person) could have anticipated in light of the information they were explicitly given. Unforeseeable consequences were defined as those actors are not aware of and, furthermore, feel there is no way a reasonable person could have anticipated the consequences. They also manipulated knowledge of consequences (informed or not informed about the consequence).

Students were asked to give a one-minute speech on why their school should double the size of the freshman class. Students in the foreseen conditions were told their speech would be randomly selected to be heard by one of three groups: another group of graduate students, the school debate team, and the school administration which was considering increasing the size of the freshman class. Those in the foreseeable condition were told their speeches would go to one of three groups, but they were not told what the groups were. Subjects in the unforeseeable conditions continued to believe their speeches were only

to be used by the experimenter. After students in each condition gave their speeches, those in the informed condition were told their speech was going to the school administration and those in the not informed conditions were told nothing.

Goethals et al. (1979) used a 2x3 design manipulating knowledge (informed/not informed) and awareness of consequences (foreseen, foreseeable, and unforeseeable). In the informed condition there was no significant difference in attitude change between foreseen and foreseeable conditions; however, both levels of the foreseen and foreseeable conditions had significantly greater attitude change ($p<.05$) than that in the unforeseeable conditions.

This experiment is a partial replication of the study by Goethals, Cooper and Naficy (1979). Because Goethals et al. (1979) found no significant difference between the foreseen and foreseeable conditions, this study used a 2x2 design (foreseen/unforeseeable and informed/not informed). Based on results of the Goethals et al. study, and the Biggers and Christ (1983) operational definition of dissonance, the following hypotheses were postulated:

1. Subjects in the foreseen-informed and not informed conditions will experience lower pleasure, higher arousal and less dominance than subjects in the unforseeable-informed and not informed conditions.

2. There will be no significant difference between levels of pleasure, arousal and dominance experienced by subjects in the foreseen-informed and not informed conditions.

3. There will be no significant difference between levels of pleasure, arousal and dominance experienced by subjects in the unforeseeable-informed and not informed conditions.

METHODOLOGY

Subjects

One hundred and thirty students from beginning speech classes at the University of Central Florida volunteered to participate in this experiment. There were 19 students in a pilot test designed to identify problems and increase internal validity. Twenty-six students served as a control group and completed the attitude scale on a tuition increase only. A total of 76 subjects were randomly assigned to the four experimental conditions. Eleven of these subjects, across the four conditions, refused to continue participation upon hearing the experiment involved giving a one-minute speech for a tuition increase at the University of Central Florida.

Results of the remaining nine participants could not be used for various reasons. Five students were on scholarships so the topic lacked relevance for them, and two advocated a tuition increase from the beginning. Partial results for two subjects were not tabulated because of improperly completed questionnaires.

Variables

Independent Variables

Since Festinger first postulated the Dissonance Theory in 1957, many researchers have examined the conditions which produce this psychological and physiological state. Extensive research indicates dissonance is produced only when the individual participating in CAA perceives

unwanted behavioral consequences as a result of their actions (Cooper & Worchel, 1970; Cooper, Zanna, & Goethals, 1974; Goethals & Cooper, 1972). Later research indicates that subjects must foresee undesirable consequences if dissonance is to be generated (Cooper, 1971; Hoyt, Henley, & Collins, 1972).

The independent variables in this paper were awareness of consequences on two levels (foreseen and unforeseeable) and knowledge of the actual consequences (informed and uninformed).

Dependent Variables

The dependent variables were attitude change, dissonance (pleasure, arousal and dominance), and the cognitions (positive and negative) of the subjects during speech preparation and delivery.

Attitude change was measured on a 19-point scale. Subjects were given a statement and asked to check the point on the scale that best fit attitude: 19 (total agreement) and 1 (total disagreement). A comparison was made between the post-treatment attitudes of the experimental conditions to those subjects in the control condition. No pretest was administered.

Measurement of dissonance was examined on two levels: 1) The emotion measurement scale developed by Mehrabian and Russell (1974) using pleasure, arousal and dominance (Appendix B); and 2) Cognitions the subjects had during their five minutes of speech preparation and their one-minute recorded speech (Petty, Wells & Brock, 1976). Participants in the experiment were asked to take a few minutes to remember their thoughts and feelings during the six minutes in which they prepared

and delivered a one-minute speech. Next, they were asked to write the thoughts as they occurred in the eight boxes available. Upon completion of this assignment subjects were instructed as follows:

> There is one more thing I would like you to do. Put a plus sign (+) next to those thoughts that are positively related to the speech, preparation and delivery, and put a negative sign (-) next to those that are negatively related to the speech, preparation and delivery.

Topic

The topic chosen for this study was tuition increase. Because money is a subject dear to the hearts of most students, it was assumed the majority of individuals participating in this experiment would be against an escalation in fees. This assumption was supported by the mean attitude of the control group toward a tuition increase (mean = 3.69 on a 19-point scale).

Procedure

Students were told when asked to volunteer for the experiment that the researcher was a graduate student completing a thesis pertaining to linguistic devices in oral communication. When each subject arrived at the experimental station he/she was given further explanation:

> As you were told in class, I am a graduate student in communications working on my thesis on the linguistics devices used in oral communication. This involves three areas: 1) How arguments are produced; 2) Vocabulary; and 3) Extraneous words such as "um", "things like that", and "you know." Now I have chosen a topic I believe most students can relate to, tuition increase. I know how most students feel about this (this gives a chance to see how the subject feels about the issue) and I have plenty of speeches against a tuition increase. So, what I am asking you to do is to prepare and give a one minute speech advocating a tuition increase at UCF. You will have five minutes to prepare the speech. I need an equal number of speeches for and against a tuition increase.

At this point the spiel changed for subjects in each of the four conditions.

Each subject received treatment individually which took approximately 20 minutes per subject. The foreseen consequences condition consisted of making students aware that two other groups, the school debate team and the school administration, were interested in listening to the speech recordings; therefore, their speech would be randomly selected to go to one of these groups. The purpose of other groups receiving the speeches was explained before subjects agreed to continue with the experiment and give the speech.

> There are two other groups interested in these speeches: the school debate team and the school administration. Your speech will be randomly selected to go to one of them. The debate team is interested because it is a topic with two sides and they want to see how students develop arguments and what arguments they produce in case they someday debate this issue. The school administration is interested because it is an issue they always face. They want to see what arguments students have both for and against a tuition increase, because there are arguments for both sides.

Subjects in the unforeseeable conditions were simply asked to give a speech for a tuition increase and were given no indication that the speech would be used for any purpose other than that stated in the introduction.

The informed/not informed variable was manipulated by telling or not telling subjects the school administration would receive their speeches. Subjects in the foreseen/informed condition were informed after they agreed to continue with the experiment and before they gave the speech. Subjects in the unforeseeable/informed condition were informed after they had delivered the speech but before completing the

questionnaire. In the unforeseeable/not informed condition, subjects simply gave a speech and were never told other groups were interested in the speeches.

After explaining the experiment to each subject the researcher made the following statement:

> Now that you know what the experiment is about, you are free to continue or leave ("or go back to class" if subjects were participating on class time). It is up to you.

At this point subjects either continued with five minutes of speech preparation or left the experimental station.

Each subject received paper and pen to jot down notes compiled in the five-minute preparation. The students were free to read from their notes or give the speech extemporaneously. Delivery of the speech was recorded on a mini cassette recorder. Most students were well prepared to speak one minute or more while a few found it difficult to speak the whole minute.

The experimenter returned after five minutes, recorded the speech and praised the subject for excellent presentation and persuasiveness of content. Subjects were then asked to complete the questionnaire. The questionnaire consisted of thought listing, emotion measurement scales, a manipulation check scale and an attitude scale. The manipulation check question was phrased two ways: "I realize that my speech will be used for groups other than graduate students studying linguistic devices in oral communication" in 48 questionnaires, and "I was told that my speech will be used for a group other than graduate students studying linguistic devices in oral communication" in 17 questionnaires (see Appendix B).

This question was phrased two ways because three subjects in the unforeseeable/not informed condition checked 19 on the 19-interval scale indicating belief that the speech would be used by another group even though no mention had been made of other groups' interest. This caused concern that subjects interpreted the question as a request for permission to use the speech for other groups instead of a check on awareness of other groups' interest. A one-way analysis of variance (ANOVA) demonstrated the form of question did not significantly affect responses to the manipulation check.

Upon completion of the questionnaire, the experimenter asked each subject to place a plus sign (+) next to thoughts which were favorable to the speech topic, preparation and delivery, and a negative sign (-) next to thoughts relating negatively. A few subjects gave thoughts a neutral rating. Judges were not considered necessary to code thoughts as either positive or negative since research on thought-listing indicates high intercoder reliability between subjects' and judges' ratings (Janis & Terwillinger, 1962; Cook, 1969; Petty, Wells & Brock, 1976; Petty & Cacioppo, 1977; Petty & Cacioppo, 1979).

When subjects finished coding thoughts, those in the informed and foreseen conditions were told that no group other than the researcher would be listening to the speeches. The experimenter then explained briefly the true purpose of the experiment.

One week after completion of data gathering each class received a letter explaining the purpose of the experiment in greater depth. This letter is in Appendix C.

RESULTS

The manipulation check indicated that subjects did understand their speeches would be forwarded to the designated groups. Table 1 contains the mean responses to the statement "I realize (I was told) that my speech will be used for a group other than graduate students studying linguistic devices used in oral communication."

TABLE 1

MEAN AVERAGE OF
KNOWLEDGE OF POSSIBLE SPEECH AUDIENCES

Condition	Foreseen	Unforeseeable
Informed	18.0_a	17.6_a
Not Informed	18.5_a	7.9_b

Means not sharing a common subscript differ at the .01% level using Neuman-Keuls.

The means were derived from a 19-interval scale, with 1 indicating belief that the speech would not be used by another group and 19 indicating an understanding that the speech would be used by a designated group. Inclusion of the three subjects from the unforeseeable/not informed condition who checked 19 in the statistical analysis does not change the result. The analysis indicates that the appropriate groups did understand their speeches would be used.

Emotion Scale

The 9-point emotion scale developed by Mehrabian and Russell (1974) was assigned the same scale used by those authors: a scale of +4 to -4 for each dimension ranging from +4 for extreme happiness to -4 for extreme unhappiness. The responses were averaged across the six items of each emotional factor. Mehrabian and Russell administered the scales to subjects in random order; however, this study gave the scales grouped in the respective emotion category.

The first hypothesis was not supported. This hypothesis stated that subjects in the foreseen conditions would experience lower pleasure, higher arousal and less dominance than subjects in the unforeseeable conditions. Subjects in the unforeseeable/not informed condition experienced greater pleasure than those in the other three conditions; however, the difference was not significant. Arousal measures indicated little difference between conditions, except unforeseeable/not informed subject had a lower mean arousal than the other three conditions. Both the unforeseeable/not informed and foreseen/ informed subjects experienced feelings of greater dominance than those in the other groups, but not significantly so.

Hypotheses two and three were supported. No significant difference resulted between levels of pleasure, arousal and dominance for the foreseen/informed and not informed conditions. There was also no significant difference between levels of pleasure, arousal and dominance for the unforeseeable/informed and not informed conditions. Table 2 on the following page illustrates the mean emotion measures for each condition. The F=.659 for pleasure, F=.249 for arousal and

F=.317 for dominance across all four conditions presents strong support for hypotheses two and three.

TABLE 2

MEAN AVERAGE
EMOTIONAL DIMENSION FOR EACH CONDITION

Emotion	Pleasure	Arousal	Dominance
Foreseen/Informed	1.076	.999	1.208
Foreseen/Not Informed	1.044	1.054	.861
Total Mean for Foreseen	1.060	1.027	1.034
Unforeseeable/Informed	.989	1.156	.918
Unforeseeable/Not Informed	1.510	.770	1.219
Total Mean for Unforeseeable	1.250	.963	1.068
F Ratios Across All Four Conditions	.659	.249	.317

It should be noted that if both the foreseen and unforeseeable conditions are combined, the results for all three emotional dimensions are in the predicted direction. Pleasure was less, arousal greater, and dominance less in the foreseen than in the unforeseeable conditions.

Thought-listing

Subjects in each condition related more positive than negative thoughts about the topic, speech preparation and delivery. The ratio of positive to negative thoughts is shown in Table 3. A two (positive

and negative thoughts) by four (conditions) analysis of variance indicated there were significantly more positive than negative thoughts

TABLE 3

TOTAL THOUGHTS AND
RATIO OF POSITIVE TO NEGATIVE THOUGHTS

Thoughts	Positive	Negative	Total
Foreseen/Informed	4.00	2.44	6.44
Foreseen/Not Informed	4.47	1.59	6.06
Unforeseeable/Informed	4.19	1.56	5.75
Unforeseeable/Not Informed	3.69	2.19	5.88

overall ($p<.01$). The ratio of positive to negative thoughts did not differ across conditions. Table 4 gives the ratio of positive to

TABLE 4

MEAN POSITIVE AND NEGATIVE THOUGHTS
ABOUT THE ISSUE

Thoughts	Positive	Negative	Total
Foreseen/Informed	2.44	.81	3.25
Foreseen/Not Informed	3.59	.88	4.47
Unforeseeable/Informed	3.44	1.00	4.44
Unforeseeable/Not Informed	1.25	.50	1.75

negative thoughts in each condition about the issue. It seems reasonable to suggest that the greater the dissonance the higher the ratio of positive to negative thoughts. This could be predicted on the basis that attitude change is a function of the ratio of positive to negative thoughts generated toward the topic. However, this was not the case in the current experiment. In fact, the ratio of positive to negative thoughts did not differ across the four conditions.

Attitude Change

Significant attitude change comparable to that of Goethals et al. (1979) was achieved. One difference exists between Goethals et al. and this study. This study included a control condition in which students were asked only to state their opinions on a tuition increase at the University of Central Florida. Table 5 summarizes the results.

TABLE 5

MEAN ATTITUDE FOR EACH CONDITION INCLUDING CONTROL

Foreseen/ Informed	Foreseen/ Not Informed	Unforeseeable/ Informed	Unforeseeable/ Not Informed
9.81_{b}	10.35_{b}	5.94_{a}	6.69_{ab}

Control 3.69_{a}

Means not sharing a common subscript differ at the 5% level. 6.69 differs from the foreseen conditions at the 10% level. Higher numbers indicate greater agreement with a tuition increase (19-interval scale).

As shown in Table 5, the foreseen conditions produced significantly more favorable attitudes toward a tuition increase than the unforeseeable/informed and control conditions. The results are similar to those of Goethals et al. (1979). In both studies, subjects who were more aware of negative consequences changed their attitudes to agree with a tuition increase more than those subjects who were not aware of negative consequences. The resulting attitude changes are in line with the dissonance theory. However, since the emotion and thought-listing measures yielded no significant evidence of dissonance, the data are more amenable to a self-perception theory explanation.

DISCUSSION

The manipulation check results indicate that subjects in the appropriate conditions were aware that their speeches would be forwarded to one of two other groups. There was a significant informed main effect.

Attitude change was in the expected direction. There was no significant difference within the two foreseen conditions or within the two unforeseeable conditions. Significance resulted at $p<.01$ for attitude change between the foreseen groups and the control group. Results from the foreseen conditions differed from the unforeseeable/informed condition at the $p<.05$ and the unforeseeable/not informed condition at $p<.10$. These results are comparable with those of the Goethals et al. (1979) study.

No significance resulted for any of the three emotion dimensions across the four conditions. Findings were in the predicted direction; however, because significance levels are so small ($F<1.0$) for all three dimensions, this must be attributed to chance. Subjects in the foreseen conditions reported slightly less pleasure, more arousal and less dominance than those in the unforeseeable conditions.

Results from the thought-listing instrument did not support the theory that dissonance is an uncomfortable emotion. A two (positive and negative thoughts) by four (conditions) ANOVA showed that subjects listed significantly more positive than negative thoughts overall

($p<.01$). Total number of thoughts generated did not differ across conditions.

The results of this paper are in the same direction as Geothals et al. (1979). Goethals et al. reported significant differences of $p<.05$ between the foreseen and foreseeable conditions and the unforeseeable conditions. The current study produced a comparable difference between the foreseen and unforeseeable/informed condition and a $p<.10$ difference between the foreseen and unforeseeable/not informed condition. The unforeseeable/not informed condition is the only one that did not differ significantly from the control group.

Goethals et al. explained their results with dissonance theory, but, like others, failed to provide a measure of dissonance. They discussed their findings in relation to personal responsibility and dissonance arousal. Though Goethals et al. believed the self-justificatory attitude change was present in the foreseen and foreseeable conditions due to dissonance, they concluded that dissonance was not present in the unforeseeable conditions.

The findings of this paper do support Goethals et al. conclusion that no dissonance arousal existed in the unforeseeable groups; however, there is also no indication of dissonance in the foreseen groups. Therefore these data do not support the dissonance theory. Both the emotion scale and thought-listing results fail to indicate the presence of dissonance in subjects during the treatment.

Self-perception theory provides a better fit for the data. Bem (1970, p.15) gives the major hypothesis of self-perception as follows:

> In identifying his own internal states, an individual partially relies on the same external cues that others use when they infer his internal states.

This theory is in line with dissonance theory in that the theme is behavior causes change. The difference lies in the intervening variable. Dissonance claims that an unpleasant emotion caused by inconsistency results in attitude change due to an attempt to justify actions. Self-perception states that an individual actually infers attitudes from his/her behavior and accompanying environmental cues; there is no inconsistency or unpleasantness.

The many definitions of dissonance attribute emotional characteristics such as guilt, tension, post-decision anxiety and arousal to this phenomena. After extensive research, Biggers and Christ (1983) operationally defined dissonance as an emotion low in pleasure, high in arousal and slightly higher than midpoint on the dominance-submissiveness dimension.

Using the emotion scale developed by Mehrabian and Russell (1974), this paper endeavored to measure dissonance across four conditions. No significant difference ensued between emotional dimensions of pleasure, arousal and dominance across the four conditions. However, findings were in the predicted direction. Subjects in the unforeseeable conditions reported more pleasure, less arousal and more dominance overall. Arousal is above the midpoint as expected, but the above midpoint ratings for pleasure and dominance were unexpected for the foreseen groups.

Dominance is an emotional dimension only recently considered a component of dissonance by Biggers and Christ (1983). Because little

research is available on dominance and dissonance, it is difficult to present dominance findings. It is conceivable that subjects saw themselves as persuaders rather than experimental guinea pigs. Taking an unpopular stand (pro-tuition increase) would call for a more persuasive message in order to convince an audience that one is justified in taking a given position. The subjects' responsibility for a persuasive speech put them in control of their audience to a certain extent. Knowing they chose to give the speech could also have increased dominant feelings.

The lack of significant differences in ratings of pleasure across conditions is puzzling. Some may argue students did not perceive negative consequences and that participation was perceived as forced. However, reactions of the subjects do not support such an explanation. Subjects reacted negatively to the possibility of others hearing their speeches. This is demonstrated by the many negative comments students made before they agreed to continue participation. For example, three students said they were not good at giving speeches and did not want anyone to hear them, and eight students refused to participate because they could not think of any reasons to raise the tuition. Many students still agreed to participate even when told others besides the experimenter were interested in listening to the speeches.

The significance of the manipulation check also supports the perception of negative consequences. Not only does dissent of 11 students to continue participation indicate successful manipulation of choice, but also intimates refusal due to perception of negative consequences. The relatively high scores reported on the pleasure dimension were

also supported by the cognitions. All subjects listed more positive cognitions than negative cognitions regarding the task.

Overall, the findings conform most closely with self-perception theory (Bem, 1965). Where dissonance theory claims it is post-decision anxiety that causes attitude change, Bem argues subjects infer their attitudes from overt behavior. Our results indicate anxiety did not vary across CAA conditions.

Bem (1972) claims that individuals infer their attitudes from behavior only when "internal cues are weak, ambiguous, or uninterpretable." This statement appears contrary to CAA where the advocate holds strong internal beliefs (Smith, 1982, p. 135). Yet, the results achieved in this paper intimate support for the self-perception theory even though it is evident that students' did not have weak internal beliefs regarding a tuition increase initially. The fact that some subjects refused to continue participation because they could think of no arguments advocating a tuition increase and the low mean attitude score of the control group demonstrate the strong feelings held by most University of Central Florida students against a tuition increase.

Smith (1982, pp. 135-136) writes that self-perception theory is too simplistic and that Bem disregards the content of self-generated messages. Smith's thesis disagrees with Himmelfarb and Eagley (1974, pp. 37, 607) who claim Bem seems to be leaning toward an interest in information processing and a concern with "how information about self-discrepant behavior is processed in effecting attitude change." These authors go one step further by asking: Why do people process information and react in certain ways? Some suggested motivations are

the desire for internal consistency and self-esteem preservation. Himmelfarb and Eagley (1974, p. 607) note the suggestion by Kelman and Baron that internal inconsistency triggers an alert that something is wrong and motivates the person to seek out the problem and solution.

This paper did examine information processing, but it did not go so far as to study the motivations behind cognitions produced. Cognitions reported by subjects tend to support the self-perception theory. The ratio of positive to negative thoughts is 2:1. Positive thoughts were principally those arguments developed by subjects advocating a tuition increase. Few cognitions indicated conflict relating to the topic. Most negative thoughts concerned a dislike for giving speeches.

Where dissonance explains the inverse relationship between reward and attitude change with self-justification, self-perception theory explains it with truth or lie signals. Bem (1970) supports this thesis with an illustration from advertising. He notes that we tend to believe the person who tells us something without any or little reward. For instance, the claims of a housewife interviewed in the grocery regarding a household cleaning product are more credible than those made by a movie star. The audience sees the housewife as being truthful since she is not receiving a large reward for her statement yet makes it anyway. This is not the case with the movie star who receives a large salary, and probably does very little housework and grocery shopping.

Bem believes that individuals infer their attitudes from their behavior in the same way they infer the attitudes of others by their actions and demeanor. He conducted an experiment to examine his hypothesis. Subjects were administered electric shocks, equal in voltage, and told they could terminate the shock anytime they wanted. Subjects reported the shocks they terminated early as being more painful. Bem used this to illustrate his point that individuals interpret their actions from their behavior.

One postulate regarding the findings of this paper is that subjects may have surmised their attitudes from their thoughts. Perhaps students noticed the number of arguments they were able to produce supporting a tuition increase and re-evaluated their attitudes accordingly. They may have concluded that if they could produce arguments for a tuition increase then they could not have been so adamantly against an increase in the first place. However, one issue arises with this supposition. Why did some subjects change attitudes more than others even though the ratio of positive to negative thoughts was the same across conditions? This may be explained with Bem's truth and lie signals. The thought processes of subjects may have been as follows:

Foreseen Conditions-

1. I agreed to prepare and deliver a pro-tuition speech.
2. I fulfilled this agreement.
3. I did so knowing the speech might be given to university decision makers.
4. I must, then, believe that a tuition increase is a reasonable idea (mean = 10.35 is just above midpoint on the 19-interval scale).

Unforeseeable/Informed Condition-

1. I agreed to do the speech.
2. I did it.
3. I was later told it would go to a university group.
4. It bothers me that my speech will be given to this group.
5. I don't feel very good about a tuition increase (mean = 5.94).

Unforeseeable/Not Informed Condition-

1. I agreed to do a speech.
2. I did it.
3. It is only being used for an experiment on linguistics.
4. I don't really believe in a tuition increase (mean = 6.69).

Though the observations of this paper point toward the self perception theory as a viable explanation, this theory faces bias from students of attitude change. The prevailing opinion is that attitude is an intervening variable intruding between environmental stimulation and overt responses (Miller, 1973). Though Bem has research support for his theory, the obstacle to wide acceptance is the common view that behavior follows attitude and not vice versa.

Possible Threats to Validity

Threats to internal validity are always present in research. If it were not for confounding variables, every researcher's problems would be solved. However, this is not the case, and there are several possible threats to validity in the current study.

First, data collection occurred over a four-day period to give a wide selection of sign-up times for volunteers. Volunteers were recruited from eight beginning speech classes. Each subject was run individually by the experimenter and the whole process took approximately

1/2 hour per treatment. To prevent leaks from subjects to fellow classmates over the week, each class was assigned a specific day on which students from that class could participate. This procedure minimized, but did not rule out the possibility of inter-subject communication. However, random questionning of subjects indicated this procedure to be successful overall. Only one subject, whose results were not used, admitted he was told by a classmate leaving the lab exactly what would transpire in the experiment. A few students said they asked for details, but subjects who had finished the treatment were very close-mouthed. It seemed students enjoyed feeling in "cahoots" with the experimenter by withholding information.

Evaluation apprehension may be cited as a threat to the internal validity of this study, but freedom of choice to participate should have alleviated that problem. In actuality, those students most afraid of speech delivery did decline to continue participation.

One last area for comment is the selection of subjects. Because students volunteered for certain time slots each day, it was impossible to randomly select subjects from the Speech 1014 pool. However, questionnaires were randomly organized, and the available subjects were randomly assigned to groups. Random assignment removes selection bias as a threat to internal validity.

Recommended Changes in Methodology

Two methodological changes are recommended to those who wish to replicate. First, future researchers should consider alleviating anonymity for the speakers. Goethals et al. (1979) recorded the

name and purpose of the presentation in front of the subject before the subject actually delivered the speech. This change would increase perception of negative consequences, feelings of personal responsibility, and perhaps reduce ratings of pleasure for the task. It would also reiterate the condition each subject was in and provide documentation for future examination.

Additionally, replicators of this study should consider administering the questionnaire in two parts. A two page questionnaire asking four different things may have overwhelmed subjects. It was initially hoped that listing cognitions occuring throughout speech preparation and delivery would help individuals remember the emotions experienced during that time also. This may have been the case, but since the scales for attitude and perception of negative consequences were so different from the first two sections, it is recommended that the last two scales be administered separately.

Areas For Future Research

It is critical that dissonance be measured if it is to remain a viable explanation of attitude change due to CAA. If the Mehrabian and Russell (1974) scale, upon further examination, is considered inadequate for tapping dissonance, efforts should be made to seek other measurement tools. Future researchers of dissonance and self-perception theories should actively examine the thoughts of subjects as a means of studying emotions leading to attitude change. Thought-listing has become an accepted method for studying information

processing. The possibilities for use are numerous. Thoughts can be analyzed for quantity and content in a variety of different ways.

Though the attitude change results of this study are commensorate with perception of negative consequences, subjects' cognitions expressed little concern that the school administration would hear the speeches. There could be two reasons for this: 1) students' names were not recorded before each speech; therefore, they retained anonymity; and 2) students were only told the school administration was always faced with the possibility of a tuition increase, but not that it was an immediate consideration. In future replication of this study consideration should be given to increasing the possible negative consequences resulting from CAA.

SUMMARY

The purpose of this study was to measure dissonance as an emotion in light of the many definitions posited on the phenomena. A 2x2 design was used manipulating knowledge of possible negative consequences on two levels (foreseen and unforeseeable) and concrete evidence of negative consequences (informed and not informed). Sixty-five students from beginning speech classes at the University of Central Florida participated in the experiment. Attitude change results were consistent with those predicted by the dissonance theory and self-perception theories. Subjects in the foreseen conditions had significantly greater attitude change toward the CAA than those in the unforeseeable conditions.

A scale for measuring emotions, developed by Mehrabian and Russell (1974), was used to measure dissonance on three dimensions: pleasure, arousal and dominance. It was predicted that subjects in the foreseen conditions would have significantly lower pleasure, greater arousal and less dominance than those in the unforeseeable conditions. The hypothesis was not supported. Since levels of dissonance were not obtained, results were explained with the self-perception model.

APPENDICES

APPENDIX A

SIGN-UP SHEET AND CONTROL GROUP ATTITUDE SCALE

Please sign your name for the time convenient for you. It should take 20 minutes at the maximum. Meet in the Journalism Lab, Humanities and Fine Arts Building, fourth floor, room 403. Thank you.

9:00 A.M.	1:40	6:20
9:20	2:00	6:40
9:40	2:20	7:00
10:00	2:40	7:20
10:20	3:00	7:40
10:40	3:20	8:00
11:00	3:40	8:20
11:20	4:00	8:40
11:40	4:20	9:00
12:00 P.M.	4:40	9:20
12:20	5:00	9:40
12:40	5:20	
1:00	5:40	
1:20	6:00	

Date:

There were two places for signatures under each time slot.

I agree that tuition at the University of Central Florida should be raised.

NO _ YES

APPENDIX B

QUESTIONNAIRES

QUESTIONNAIRE

We are interested in what you were thinking about during your speech preparation and delivery. Simply write down the first idea that comes to mind in the first box, the second idea in the second box, etc. Please put only one idea or thought in a box and be specific. You should try to only record those ideas you were thinking during speech preparation and delivery. You will have a few minutes to write your thoughts. Please be completely honest and list all of the thoughts that you had. Please remember to only list specific thoughts you had during speech preparation and delivery.

1.
2.
3.
4.
5.
6.
7.
8.

PLEASE GO TO NEXT PAGE

The following scales provide a range of moods you may have experienced while making notes for your speech and during the delivery of your speech. Take about two minutes to really get into the mood of the situation. Please report the feelings you had only during your speech preparation and delivery by responding to the adjective pairs below. Some of the pairs might seem unusual, but you probably felt more one way than the other. So, for each pair, put a check mark (Example: ___ : X : ___) closer to the adjective which you believe describes your feelings better. The more appropriate that adjective seems, the closer you put your check mark to it. Please remember only to report the feelings you experience during your speech preparation and delivery.

Happy	___:___:___:___:___:___:___:___:___	Unhappy
Pleased	___:___:___:___:___:___:___:___:___	Annoyed
Satisfied	___:___:___:___:___:___:___:___:___	Unsatisfied
Contented	___:___:___:___:___:___:___:___:___	Melancholic
Hopeful	___:___:___:___:___:___:___:___:___	Despairing
Relaxed	___:___:___:___:___:___:___:___:___	Bored
Stimulated	___:___:___:___:___:___:___:___:___	Relaxed
Excited	___:___:___:___:___:___:___:___:___	Calm
Frenzied	___:___:___:___:___:___:___:___:___	Sluggish
Jittery	___:___:___:___:___:___:___:___:___	Dull
Wide Awake	___:___:___:___:___:___:___:___:___	Sleepy
Aroused	___:___:___:___:___:___:___:___:___	Unaroused
Controlling	___:___:___:___:___:___:___:___:___	Controlled
Influential	___:___:___:___:___:___:___:___:___	Influenced
In Control	___:___:___:___:___:___:___:___:___	Cared For
Important	___:___:___:___:___:___:___:___:___	Awed
Dominant	___:___:___:___:___:___:___:___:___	Submissive
Autonomous	___:___:___:___:___:___:___:___:___	Guided

Please check the point on the following scales that best fits your answer.

1. I realize that my speech will be used for a group other than graduate students studying linguistic devices used in oral communication.

NO _ YES

2. I agree that tuition at the University of Central Florida should be raised.

NO _ YES

QUESTIONNAIRE

We are interested in what you were thinking about during your speech preparation and delivery. Simply write down the first idea that comes to mind in the first box, the second idea in the second box, etc. Please put only one idea or thought in a box and be specific. You should try to only record those ideas you were thinking during speech preparation and delivery. You will have a few minutes to write your thoughts. Please be completely honest and list all of the thoughts that you had. Please remember to only list specific thoughts you had during speech preparation and delivery.

1.
2.
3.
4.
5.
6.
7.
8.

PLEASE GO TO NEXT PAGE

The following scales provide a range of moods you may have experienced while making notes for your speech and during the delivery of your speech. Take about two minutes to really get into the mood of the situation. Please report the feelings you had only during your speech preparation and delivery by responding to the adjective pairs below. Some of the pairs might seem unusual, but you probably felt more one way than the other. So, for each pair, put a check mark (Example: ___ : X : ___) closer to the adjective which you believe describes your feelings better. The more appropriate that adjective seems, the closer you put your check mark to it. Please remember only to report the feelings you experience during your speech preparation and delivery.

Happy	___:___:___:___:___:___:___:___	Unhappy
Pleased	___:___:___:___:___:___:___:___	Annoyed
Satisfied	___:___:___:___:___:___:___:___	Unsatisfied
Contented	___:___:___:___:___:___:___:___	Melancholic
Hopeful	___:___:___:___:___:___:___:___	Despairing
Relaxed	___:___:___:___:___:___:___:___	Bored
Stimulated	___:___:___:___:___:___:___:___	Relaxed
Excited	___:___:___:___:___:___:___:___	Calm
Frenzied	___:___:___:___:___:___:___:___	Sluggish
Jittery	___:___:___:___:___:___:___:___	Dull
Wide Awake	___:___:___:___:___:___:___:___	Sleepy
Aroused	___:___:___:___:___:___:___:___	Unaroused
Controlling	___:___:___:___:___:___:___:___	Controlled
Influential	___:___:___:___:___:___:___:___	Influenced
In Control	___:___:___:___:___:___:___:___	Cared For
Important	___:___:___:___:___:___:___:___	Awed
Dominant	___:___:___:___:___:___:___:___	Submissive
Autonomous	___:___:___:___:___:___:___:___	Guided

Please check the point on the following scales that best fits your answer.

1. I was told that my speech will be used for a group other than graduate students studying linguistic devices used in oral communication.

   NO _ YES

2. I agree that tuition at the University of Central Florida should be raised.

   NO _ YES

APPENDIX C

DEBRIEFING LETTER

The Thesis Title is "A Method for Evaluating Dissonance a an Emotion leading to Attitude Change."

A short definition of dissonance is:

> The feeling a person experiences when he/she participates in behavior contrary to their beliefs.

There have been over 900 studies done on this phenomena. Most research shows that persons who participate in activity counter to their attitudes (counterattitudinal advocacy-CAA), they usually change their attitude to match their behavior.

Some researchers credit this attitude change to dissonance. They believe that the conflict people feel when they act contradictory to their beliefs, the uncomfortable conflict causes them to change.

Research indicates that attitude change may result from this feeling, but no one has explicitly sought to investigate dissonance as an emotion itself. There are two reasons for this: 1) Emotions are very hard to define; and 2) Emotions are difficult to measure. This presents a difficulty in dissonance research, however. Because dissonance has never been "proven" so to speak, dissonance researchers are always facing scholars who do not credit their explanations for attitude change.

The purpose of my paper is to define dissonance operationally and then measure it. Mehrabian and Russell, in 1974, developed a 81% reliable tool for measuring emotions. This was the scale on the second page of the questionnaire.

I hoped that by asking students to give speeches advocating a tuition increase (the majority of students are against this) they would experience dissonance and attitude change. At this point, I do not have my results computed, but when they are, they will be available in the library in my thesis.

Thank you so much for your cooperation. It was greatly appreciated. If any of you seek a masters and are required to do a thesis, just give me a holler.

Don't feel bad...I have begun to think that a tuition increase isn't a bad idea after all.

Signature _____

P.S. Your speeches are not going to be listened to by anyone. That was just a manipulation to increase dissonance.

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